Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) An X-ray tomograph comprising:

a radiation source and a radiation detector arranged opposite to each other, between which a bed with an examinee placed thereon is provided, said radiation source and radiation detector turning around said bed which can be moved with respect to [[this]] a go-around axis, radiation irradiated from said radiation source and passing through the examinee being detected using said radiation detector; and

reconfiguration means for creating a three-dimensional tomographic image in a region in concern of the object from the detected projection data,

wherein said reconfiguration means determines, for each voxel, a projection data phase range as an angle between 180 and 360 degrees from projection data obtained at a spiral orbit scan so that a difference in absolute values of cone angles at both ends of the projection data phase range used is reduced, superimposes a reconfiguration filter, assigns weights to data of the same phase or opposite phase for each phase for [[this]] the projection data phase range and three-dimension back projects [[this]] the filter-processed projection data over said projection data phase range determined for each voxel along the irradiation trace of the radiation beam, ~~wherein when determining said projection data phase range, a projection data phase range is determined so that the difference in the absolute values of cone angles at both ends of the projection data phase range used is reduced~~.

Claim 2 (canceled).

3. (currently amended) The X-ray tomograph according to claim 1 [[2]], wherein the projection data phase range used is determined so as to be the

4. (previously presented) The X-ray tomograph according to claim 1, wherein said projection data phase range is either 270 degrees or 360 degrees.

5. (currently amended) The X-ray tomograph according to any one of claims 1, 3 and [[to]] 4, wherein projection data whose number of images taken per rotation is a multiple of the number of sides C of a ~~rectangular or hexagonal display pixel~~ rectangle or hexagon is acquired, and said reconfiguration means comprises back projection means for superimposing said reconfiguration filter on this projection data, grouping data at the same channel position and having projection phases in the go-around direction shifting by 2 Nπ/C (N=1, 2, 3, ...) radians at a time and performing back projection to a square image array group by group.

6. (currently amended) The X-ray tomograph according to any one of claims 1, 3 and [[to]] 4, wherein said reconfiguration means converts the projection data obtained to data including fan beam data and parallel beam data whose number of images taken per rotation is a multiple of the number of sides C of a ~~rectangular or hexagonal display pixel~~ rectangle or hexagon, superimposes the filter on this projection data, groups data at the same channel position and having projection phases in the go-around direction shifting by 2Nπ/C (N=1, 2, 3, ...) radians at a time and performs back projection to a square image array group by group.

7. (currently amended) The X-ray tomograph according to claim 1, wherein associating means is provided for associating pixel intervals in the body axis direction ~~of the image using rectangular or hexagonal display pixels~~ with the relative moving speed between the object and said radiation source in the go-around axis direction.

8. (currently amended) The X-ray tomograph according to claim 7, wherein said associating means is constructed so that the relationship between pixel interval rpitch in the body axis direction of [[said]] a square image and the relative moving speed in the go-around axis direction of the object and said radiation source is expressed by 2·N·rpitch (N=1, 2, 3... ...).

9. (currently amended) The X-ray tomograph according to claim 8, wherein at the phase of Nπ (N=1, 2, 3, ...) radians of the radiation source, the position on the radiation detector at which the beam passing through a voxel I (x, y, Z) whose body axis direction position is Z millimeters [[and]] intersects and the position on the radiation detector at which the beam passing through a voxel I (-x, -y, NJ/2+Z) whose body axis direction position is N·J/2+Z millimeters intersects ~~remains~~ are the same.

Claims 10-14 (canceled).